AMENDMENTS

In the claims

Please amend the claims as follows.

1. (Original) A method for determining binding of a receptor to one or more ligands, comprising contacting a collective receptor variant population with said one or more ligands and detecting binding of said one or more ligands to said collective receptor variant population.

2. (Original) The method of claim 1, further comprising dividing said collective receptor variant population into two or more subpopulations, contacting one or more of said two or more subpopulations with said one or more ligands and detecting one or more receptor variant subpopulations having binding activity to said one or more ligands.

3. (Original) The method of claim 2, wherein said dividing, contacting and detecting are repeated one or more times.

4. (Original) The method of claim 3, wherein said detecting identifies a receptor variant having binding activity to said one or more ligands.

5. (Original) The method of claim 4, wherein said detecting identifies a receptor variant having optimal binding activity to said one or more ligands relative to a parent receptor of said receptor variant population.

6. (Original) The method of claim 1, wherein said receptor variant population is recombinantly expressed in cells.

7. (Original) The method of claim 6, wherein said cells are melanophores.

8. (Original) The method of claim 1, further comprising dividing said collective receptor variant population into two or more subpopulations, contacting said two or more subpopulations with said one or more ligands and detecting one or more receptor variant subpopulations having binding activity to said one or more ligands.

9. (Original) The method of claim 1, further comprising isolating an individual receptor variant having binding activity to said one or more ligands, wherein said receptor variant is linked to an identifiable tag.

Claims 10-38 (cancelled)

Please add the following new claims.

39. (New) A method for determining binding of a receptor to one or more ligands, comprising contacting a receptor variant population with said one or more ligands and detecting binding of said one or more ligands to said collective receptor variant population, wherein the receptor is a polypeptide and each variant has an amino acid substitution relative to a parent receptor.

40. (New) The method of claim 39, further comprising dividing said collective receptor variant population into two or more subpopulations, contacting one or more of said two or more subpopulations with said one or more ligands and detecting one or more receptor variant subpopulations having binding activity to said one or more ligands.

41. (New) The method of claim 40, wherein said dividing, contacting and detecting are repeated one or more times.

42. (New) The method of claim 41, wherein said detecting identifies a receptor variant having binding activity to said one or more ligands.

43. (New) The method of claim 42, wherein said detecting identifies a receptor variant having optimal binding activity to said one or more ligands.

44. (New) The method of claim 39, wherein said receptor variant population is recombinantly expressed in cells.

45. (New) The method of claim 44, wherein said cells are melanophores.

46. (New) The method of claim 39, further comprising dividing said collective receptor variant population into two or more subpopulations, contacting said two or more subpopulations with said one or more ligands and detecting one or more receptor variant subpopulations having binding activity to said one or more ligands.

47. (New) The method of claim 39, further comprising isolating an individual receptor variant having binding activity to said one or more ligands, wherein said receptor variant is linked to a peptide tag.